Docket No. 1232-5177

Application No. 10/686,396

Reply to Office Action of December 29, 2008

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-67 (canceled):

68 (previously presented): A two-dimensional scanning apparatus, comprising:

a deflector for two-dimensionally deflecting a light beam emitted from a light source; and an optical scanning system for forming an image of the light beam deflected by a reflecting surface of said deflector onto a surface to be scanned,

wherein in a plane including a one-dimensional direction of the two-dimensional directions, the light beam emitted from the light source is adapted to be incident, obliquely relative to a central axis of a two-dimensional deflection range of the light beam deflected by the deflective surface of the deflector, onto the reflecting surface of the deflector,

wherein the scanning optical system does not include a reflecting surface having optical power,

wherein the optical scanning system includes: a first meniscus lens having a negative optical power whose concave surface faces a side of the deflector; and a second meniscus lens having a positive optical power whose concave surface faces a side of the deflector and which is disposed in the surface-to-be-scanned side of the first meniscus lens, and

wherein the second meniscus lens is tilted, about an axis perpendicular to a plane including the one-dimensional direction serving as a rotation axis, toward a side in which a light beam emitted from the light source is incident on the reflecting surface with respect to the first meniscus lens, and the second meniscus lens is shifted, in a plane including the one-dimensional

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direction, toward an incident side of the reflecting surface of the light beam emitted from the light source.

69 (previously presented): A two-dimensional scanning apparatus according to claim 68, further comprising a third meniscus lens having a positive optical power whose concave surface faces a side of the deflector and which is disposed in the surface-to-be-scanned side of the second meniscus lens.

70 (previously presented): A two-dimensional scanning apparatus according to claim 69, wherein the third meniscus lens is shifted toward a direction away from the incident side of the reflecting surface of the light beam emitted from the light source in a plane including the onedimensional direction.

71 (previously presented): A two-dimensional scanning apparatus according to claim 68, wherein the second meniscus lens is an anamorphic lens.

72 (previously presented): An image display apparatus comprising a two-dimensional scanning apparatus, in which an image is displayed onto a surface to be scanned by use of the two-dimensional scanning apparatus, wherein the two-dimensional scanning apparatus comprises:

a deflector for two-dimensionally deflecting a light beam emitted from a light source; and an optical scanning system for forming an image of the light beam deflected by an reflecting surface of said deflector onto a surface to be scanned,

wherein in a plane including a one-dimensional direction of the two-dimensional directions, the light beam emitted from the light source is adapted to be incident, obliquely

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relative to a central axis of a two-dimensional deflection range of the light beam deflected by the deflective surface of the deflector, onto the reflecting surface of the deflector,

wherein the scanning optical system does not include a reflecting surface having optical power,

wherein the optical scanning system includes: a first meniscus lens having a negative optical power whose concave surface faces a side of the deflector; and a second meniscus lens having a positive optical power whose concave surface faces a side of the deflector and which is disposed in the surface-to-be-scanned side of the first meniscus lens, and

wherein the second meniscus lens is tilted, about an axis perpendicular to a plane including the one-dimensional direction serving as a rotation axis, toward a side in which a light beam emitted from the light source is incident on the reflecting surface with respect to the first meniscus lens, and the second meniscus lens is shifted, in a plane including the one-dimensional direction, toward an incident side of the reflecting surface of the light beam emitted from the light source.

73 (previously presented): A two-dimensional scanning apparatus, comprising:

a deflector for two-dimensionally deflecting a light beam emitted from a light source; and an optical scanning system for directing the light beam deflected by the deflector onto a surface to be scanned, the optical scanning system is composed of one or two lenses,

wherein the light beam emitted from the light source is made incident on the deflector obliquely with respect to at least one of two deflecting axes of the deflector perpendicular to each other.

wherein a lens, or a lens of two lenses which is disposed closer to the surface to be scanned, in the optical scanning system is tilted such that an angle between a normal at a surface vertex of an incident surface of the lens and a central axis of a two-dimensional deflecting range of the light beam soon after the light beam is reflected on the deflector is larger than a maximum field angle of the two-dimensional deflecting range and an angle between a normal at a surface vertex of an emergence surface and the central axis is larger than the angle between the normal of the incident surface and the central axis.

wherein the surface vertex of the incident surface of the lens or the lens of two lenses which is disposed closer to the surface to be scanned is positioned shifted with respect to the central axis toward a side in which an extension of the normal at the surface vertex of the incident surface toward a light emergence direction extends,

wherein the surface vertex of the emergence surface of the lens or the lens of two lenses which is disposed closer to the surface to be scanned is positioned shifted with respect to the central axis toward a side in which the normal at the surface vertex of the emergence surface extends, and

wherein the surface to be scanned is tilted in the same direction in which the incident surface and the emergence surface are tilted.

74 (previously presented): A two-dimensional scanning apparatus according to claim 73, wherein a direction in which the incident surface and the emergence surface are tilted is same as a direction of the two deflecting axes perpendicular to each other.

75 (previously presented): A two-dimensional scanning apparatus according to claim 73, wherein surface vertexes of the incident surface and the emergence surface are positioned out of the two-dimensional deflection range, and only a half of the incident surface and the emergence

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surface between the respective surface vertexes and the respective edges is used to direct the light beam deflected by the deflector onto the surface to be scanned.

76 (previously presented): A two-dimensional scanning apparatus according to claim 73, wherein the incident surface and the emergence surface are anamorphic surfaces.

77 (previously presented): A two-dimensional scanning apparatus according to claim 73, wherein the incident surface and the emergence surface are rotationally asymmetrical surfaces.

78 (previously presented): A two-dimensional scanning apparatus according to claim
73, wherein the lens is a meniscus lens whose concave surface faces the deflector side.

79 (previously presented): A two-dimensional scanning apparatus according to claim 74, wherein field angles in directions of the two deflecting axes perpendicular to each other are different from each other.

80 (previously presented): A two-dimensional scanning apparatus according to claim
73, wherein the light beam incident on the deflector is a condensed light beam.

81 (previously presented): An image display apparatus comprising a two-dimensional scanning apparatus, in which an image is displayed onto a surface to be scanned by use of the two-dimensional scanning apparatus, wherein the two-dimensional scanning apparatus, comprising:

a deflector for two-dimensionally deflecting a light beam emitted from a light source; and
an optical scanning system for directing the light beam deflected by the deflector onto a
surface to be scanned, the optical scanning system is composed of one or two lenses,

wherein the light beam emitted from the light source is made incident on the deflector obliquely with respect to at least one of two deflecting axes of the deflector perpendicular to each other.

wherein a lens, or a lens of two lenses which is disposed closer to the surface to be scanned, in the optical scanning system is tilted such that an angle between a normal at a surface vertex of an incident surface of the lens and a central axis of a two-dimensional deflecting range of the light beam soon after the light beam is reflected on the deflector is larger than a maximum field angle of the two-dimensional deflecting range and an angle between a normal at a surface vertex of an emergence surface and the central axis is larger than the angle between the normal of the incident surface and the central axis,

wherein the surface vertex of the incident surface of the lens or the lens of two lenses which is disposed closer to the surface to be scanned is positioned shifted with respect to the central axis toward a side in which an extension of the normal at the surface vertex of the incident surface toward a light emergence direction extends,

wherein the surface vertex of the emergence surface of the lens or the lens of two lenses which is disposed closer to the surface to be scanned is positioned shifted with respect to the central axis toward a side in which the normal at the surface vertex of the emergence surface extends, and

wherein the surface to be scanned is tilted in the same direction in which the incident surface and the emergence surface are tilted.

82 (previously presented): An image display apparatus according to claim 81, wherein a plurality of light beams having wavelengths different from each other emitted from the light

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source are made incident on the deflector so as to form a color image on the surface to be scanned